

EnviroTech
Consultants, Inc.
5400 Rosedale Highway
Bakersfield, CA 93308

25H
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JUN - 1 2015

RWQCB-CVR
FRESNO, CALIF.

**J&K OPERATING COMPANY, INC
RESPONSE TO RWQCB SECTION 13267 ORDER
POND INFORMATION AND SAMPLING RESULTS**

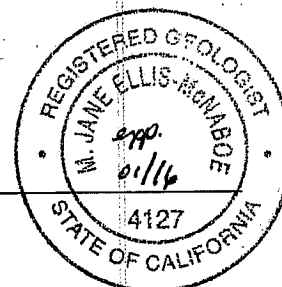
**JADE KERN PROJECT LEASE
SECTION 15, T32S/R23E MDB&M**

May 28, 2015

Prepared by:

EnviroTech Consultants, Inc.

M. Jane Ellis-McNaboe
M. Jane Ellis-McNaboe, PG



May 28, 2015

J&K Operating Co., Inc.
909 Twentyone Canyon, Road
Taft, CA 93268

Certification Statement

RWQCB Order 13267, Pond Sampling Technical Report
J&K Operating Co., Inc. Jade Kern Project Lease

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

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ATTACHMENTS

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1.0 IDENTIFICATION OF DISCHARGES OF PRODUCED WATER TO LAND

One pond was identified containing discharges of produced water. A map of the pond and surrounding lease is included as Attachment A.

2.0 POND SAMPLING

Representative samples of wastewater were collected by the operator from the pond on April 11, 2015 as required by Order 13267 dated April 1, 2015 (Attachment B). The samples were decanted from the sample port on the wastewater tank into appropriate sampling containers and cooled with ice for storage and transportation under standard Chain of Custody procedures.

3.0 POND SAMPLING ANALYTICAL RESULTS

The samples were received by Zalco Laboratories, Inc on April 13, 2015. EnviroTech received the laboratory analytical report on May 9, 2015. The analytical results are summarized in the following tables; complete laboratory reports are included in Attachment C.

Table 3-1: General Chemistry

Sample ID	Date Sampled	Total Dissolved Solids	Calcium	Iron	Magnesium	Manganese	Potassium	Sodium	Strontium	Alkalinity as CaCO3	Bicarbonate ion as HCO3	Carbonate as CO3	Hydroxide as OH
EPA Analytical Method		2540C_Calcd	6010B							2320B			
Units		mg/L											
Reporting limit		Reporting limits vary, see full analytical report.											
Results													
Jade Kern Project	4/11/2015	9,100	27	<0.1	42	<0.03	65	4,300	1	240	1,200	<10	<10

N/A – Not analyzed for this compound

Bold = Analyte detected at or above minimum reporting limit

Table 3-2: Anions

Sample ID	Date Sampled	Anions, Ion Chromatography		
		Chloride	Nitrate as NO3	Sulfate
EPA Analytical Method			300_ORGFMS	300_ORGFM_28D
Units				
Reporting Limit		Reporting limit varies by sample. See full analytical report.		
Jade Kern Project	4/11/2015	4,700	<500	68

Bold = Analyte detected at or above minimum reporting limit

Table 3-3: Metals

Sample ID	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead
EPA Analytical Method		6010B									
Units		mg/L									
Reporting Limit		Reporting limit varies by sample. See full analytical report.									
Jade Kern Project	4/11/2015	<0.2	<0.02	0.26	<0.01	29	<0.01	<0.05	<0.1	<0.05	<0.05

Sample ID	Date Sampled	Lithium	Molybdenum	Nickel	Selenium	Silver	Strontium	Thallium	Vanadium	Zinc	Mercury
EPA Analytical Method		6010B									
Units		mg/L									
Reporting Limit		Reporting limit varies by sample. See full analytical report.									
Jade Kern Project	4/11/2015	2.2	<0.1	0.054	<0.05	<0.02	1.3	<0.5	<0.1	<0.05	<0.002

Bold = Analyte detected at or above minimum reporting limit.

Table 3-4: BTEX and TPH

Sample ID	Date Sampled	Benzene	Ethylbenzene	Toluene	Xylenes, Total	Oil and Grease (TPH)
EPA Analytical Method		8260 B				1664
Units		ug/L				mg/L
Reporting Limit		Varies, see laboratory report				5
Jade Kern Project	4/11/2015	18.4	19.6	<5.0	23.30	<5.0

N/A – Not analyzed for this compound

Bold = Analyte detected at or above minimum reporting limit

Table 3-5: Semi-volatile Organic Compounds

Sample ID	Date Sampled	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene
EPA Analytical Method		8270C_SIM															
Units		ug/L															
Jade Kern Project	4/11/2015	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

N/A – Not analyzed for this compound

Bold = Analyte detected at or above minimum reporting limit
Reporting limit varies by sample. See full analytical report.

Table 3-6: Radionuclides

Sample ID	Date Sampled	Gross Alpha	Radium-226	Radium-228	Uranium
EPA Analytical Method		9310	9315_Ra226	9320_Ra228	6020A
Units		pCi/L			
Regulatory Threshold*		15	3	5	20
Jade Kern Project	4/11/2015	9.67±4.01	0.119±0.202	0.0±8.26	0.594±0.594

Bold = Analyte detected at or above minimum reporting limit.

Reporting limit varies by sample. See full analytic report.

* Title 22, Table 6443. MCL

4.0 INFORMATION FOR EACH SURFACE IMPOUNDMENT

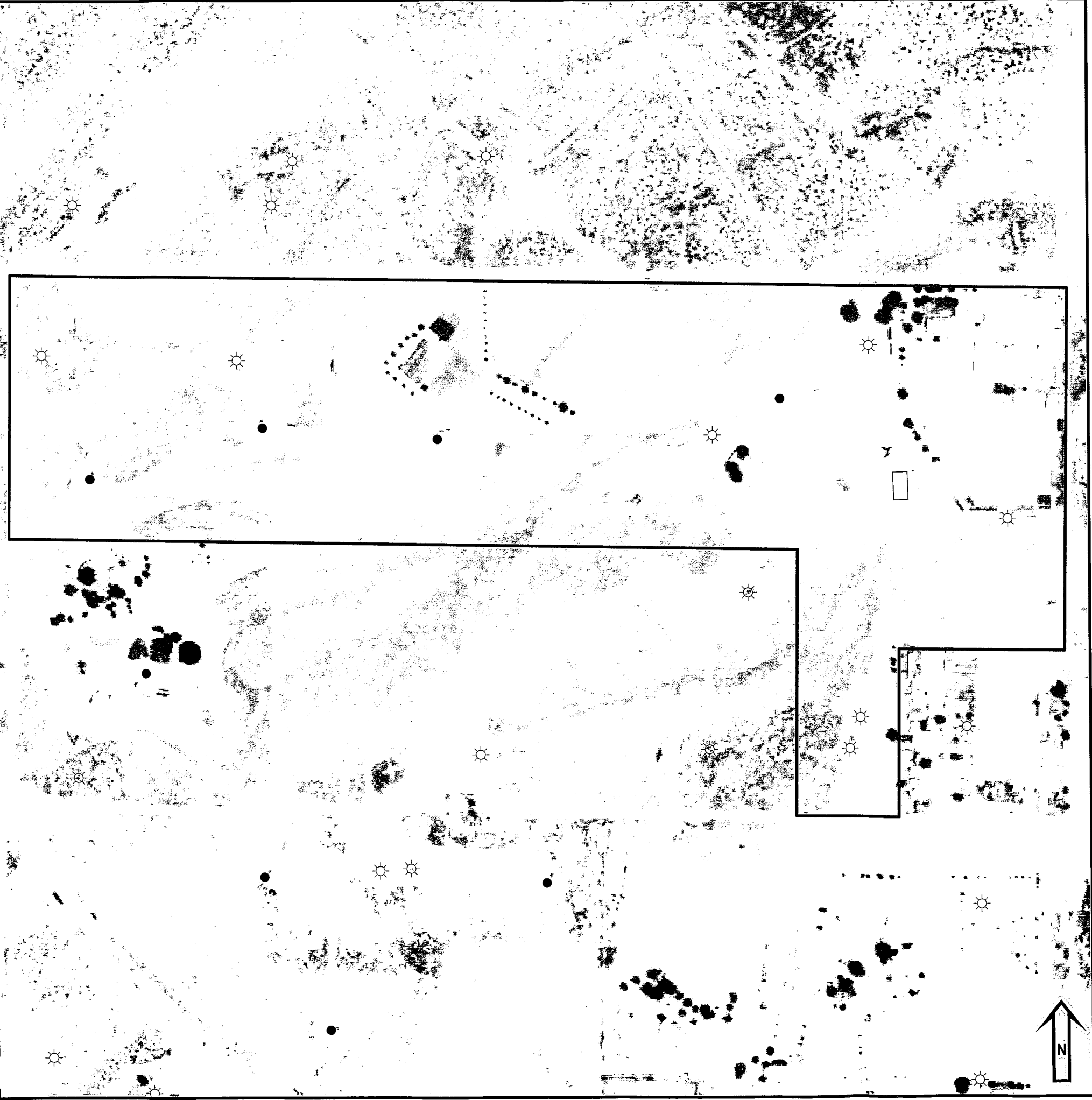
The following table contains the required information for the J&K Operating Company, Inc. (J&K), Jade Kern Project pond. J&K has operated the lease since July 2005; the pond was operating when the lease was purchased, the exact duration in months that the pond has been in operation is unknown.

Table 4-1: Surface Impoundment Information

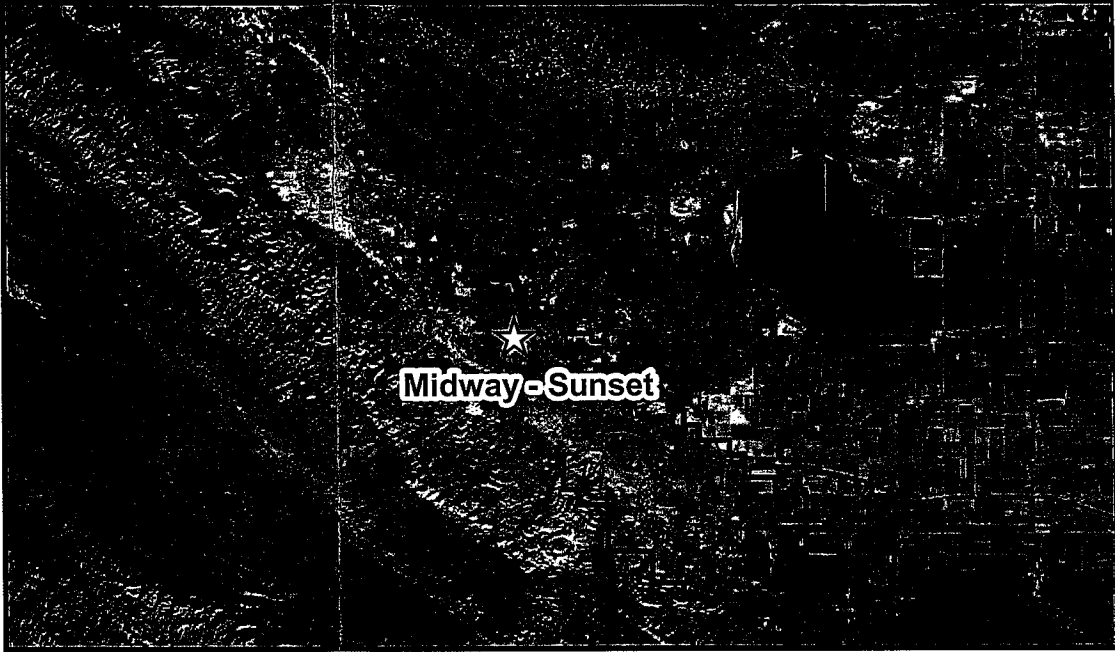
Surface Impoundment Dimensions (feet)			Location (NAD 83)	Assessor's Parcel Number of the Lease	Duration of Discharge (months)	Volume of Wastewater Discharged per year
Length	Width	Depth	Latitude:35.149844°	198-300-07	12 months/year	1,825 bbls
35'	70'	10'	Longitude: -119.484282°			

ATTACHMENT A


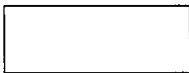


J&K OPERATING COMPANY, INC
JADE KERN PROJECT POND MAP

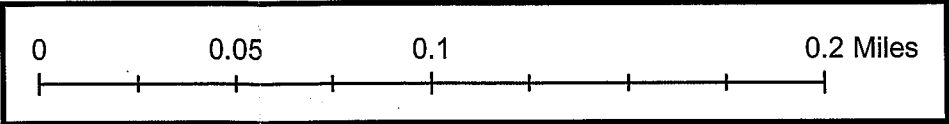


J&K Operating Company



Legend

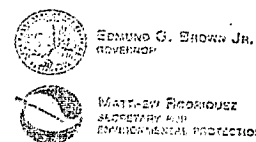
	Jade Kern Lease	DOGGR Well Status
	Sump (10ft deep)	 Active
		 Plugged



Prepared By: EnviroTech Consultants, Inc.	TITLE:	Jade Kern Lease Sump
	FIELD:	Midway Sunset Oil Field
	COUNTY:	Kern
Section/Township/Range	DRN BY:	Ashley Bylow
T32S/R23E - Section 10	DATE:	May 14, 2015
	SCALE:	1:3,100

ATTACHMENT B

J&K OPERATING COMPANY, INC
COPY OF RWQCB ORDER 13267, 1 APRIL, 2015



Central Valley Regional Water Quality Control Board

1 April 2015

Kal J. Vaughn
J & K Operating Company Inc.
909 Twentyone Canyon Road
Taft, CA 93268

CERTIFIED MAIL
7014 3490 0001 7023 0469

CALIFORNIA WATER CODE DIRECTIVE PURSUANT TO SECTION 13267. You are legally obligated to respond to this Order. Please read this Order carefully.

J & K Operating Company Inc. (hereafter Discharger) has been identified as the owner or operator of petroleum production wastewater disposal ponds (ponds). A list of the ponds (and the leases and oil fields where they are located) that the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) identifies as under your control is presented in Attachment A. Ponds for the disposal of wastewater generated during the course of petroleum production have the potential to affect the quality of groundwater (a water of the State). Groundwater underlying the areas where your ponds are located have beneficial uses as identified in the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan).

This order requires the collection and analysis of wastewater samples collected from each of the ponds listed in Attachment A to characterize the discharge. Each sample is to be analyzed for each of the constituents listed in Attachment B. These data are needed to comprehensively characterize wastewater in each pond and provide data needed to evaluate the threat to the quality of waters of the State. If more than one pond is connected in series (i.e., one pond drains directly to the next with no other source of inflow) then only the upstream pond must be sampled. This order is not intended to require the collection of duplicative data. If during the 12 months (one year) prior to the date of this order, samples required by this order have been analyzed from one or more of the ponds for the required constituents, that data can be submitted for the appropriate order requirements.

This order also requires Discharger to identify any discharge(s) of oil field wastewater to land that is not identified in Attachment A. Discharger must also collect and analyze wastewater samples in accordance with Attachment B from any additionally identified discharge to characterize the discharge.

The Central Valley Water Board's authority to require technical reports derives from Section 13267 of the California Water Code, which specifies, in part, that:

(ff) *A regional Board ... in connection with any action relating to any plan or requirement authorized by this division, may investigate the quality of any waters of the State within its region.*

(b)(1) In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefit to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The Central Valley Water Board is concerned about the potential impacts to water quality posed by the discharge of oil field produced waters in surface ponds. The technical information and reports required by this order are necessary to assess the potential threat to water quality. The need to understand the potential impacts to water quality justify the need for the information and reports required by this order. Based on the nature and possible consequences of the discharges of waste, the burden of providing the required information, including the reporting costs, bears a reasonable relationship to the need for the report, and the benefits to be obtained. Discharger is required to submit this information and reports because it is the operator of the ponds listed in Attachment A of this order.

The unauthorized discharge of waste containing oil field waste constituents to land, including unlined ponds, may result in the degradation of water quality and creates or threatens to create, a condition of pollution in groundwater. Significant concentrations of salinity (measured as TDS and EC), significant contributors to salinity such as chloride and sulfate, and boron are present in oil field wastewater. Other potential constituents such as, but not limited to, metals, radionuclides, and organic compounds pose a threat to water quality. The concentrations of these waste constituents in wastewater being discharged needs to be known to evaluate the threat. In addition, all locations where these discharges are occurring needs to be known.

Underlying groundwater can be degraded if mixed with oil field wastewater. Elevated concentrations of oil field waste constituents could impair the groundwater for municipal and domestic supply and agricultural supply uses.

Under the prescribed authority of California Water Code section 13267, the Central Valley Water Board directs Discharger to:

1. **By 15 June 2015**, submit a technical report containing the following information:

- A. Identification of any discharges of oil field produced waters to land, including but not limited to ponds, since April of 2014 that are not listed in Attachment A;
- B. Collect representative samples of wastewater within each of the ponds. Samples must be analyzed in accordance with the water quality analysis and reporting requirements contained in Attachment B to this Order;¹

If a representative sample cannot feasibly be collected from one or more of the sources discharging to a surface impoundment(s), then a comment will need to be added to the technical report required by this Order demonstrating that collection of a representative sample from a specific source is not feasible within the required timeframe, and propose an alternative sampling procedure and expeditious time schedule for obtaining a representative sample for each source. Alternative sampling procedures and time schedules are subject to approval by the Assistant Executive Officer of the Central Valley Regional Water Quality Control Board.

- C. All available information for each of the surface impoundment(s), including dimensions (i.e., length, width, and depth), latitude and longitude, Assessor's Parcel Numbers of the lease, duration of the discharge (in months), and the volume of wastewater discharged per year.
- D. A location map that includes the following information:
 - i. All surface impoundment(s) at the Facility,
 - ii. Include the boundary lines for all leases at the Facility, and
 - iii. Legend with the name of the surface impoundment(s).

2. **By 15 April 2015**, Discharger needs to contact Dane S. Johnson of this office at (559) 445-5525 if you have received this Order and cannot collect the required samples.

¹ All previously obtained analytical data for oil field produced wastewater samples collected at the Facility, if any, with a description of the source and location for each analysis may be submitted in the alternative for re-running tests if the sample(s) was collected and analyzed within 12 months (one year) of the date of this order.

The technical report required by this Order must be submitted to the attention of:

Ronald Holcomb
Central Valley Water Board
1685 E Street
Fresno, CA 93706

Based on the information submitted in the technical report, additional information or action may be required.

With the report required by this Order, Discharger shall provide under penalty of perjury under the laws of California a "Certification" statement to the Central Valley Water Board. The "Certification" shall include the following signed statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The Central Valley Water Board reserves the right to issue a Notice of Violation or pursue enforcement for Discharger's activities after reviewing the documentation provided in response to this Order.

The Technical Report is to be signed and stamped by a California Professional Engineer (Registered as a Civil Engineer) or a registered California Professional Geologist. Any laboratory analyses shall be performed by an analytical laboratory certified by the State of California for the analyses performed. Submissions pursuant to this Order shall include a statement by Discharger, or an authorized representative of Discharger, certifying (as described above) that the information submitted is true, complete, and accurate.

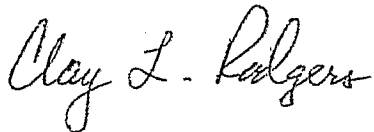
The failure to furnish the required report, or the submission of a substantially incomplete report or false information, is a misdemeanor, and may result in additional enforcement actions being taken against Discharger, including issuance of an Administrative Civil Liability Complaint pursuant to California Water Code section 13268. Liability may be imposed pursuant to California Water Code section 13268 in an amount not to exceed one thousand dollars (\$1,000) for each day in which the violation occurs. All discharges to unpermitted ponds should cease pending review and submission of the technical information sought by this order.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with

1 April 2015

California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 days after the date of this directive, except that if the thirtieth day following the date of this directive falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

If you have any questions regarding this matter, please contact Doug Patteson of this office at (559) 445-5577 or at doug.patteson@waterboards.ca.gov.



Clay L. Rodgers
Assistant Executive Officer

cc: Julie Macedo, Office of Enforcement, State Water Resources Control Board, Sacramento
Mike Toland, California Division of Oil, Gas, and Geothermal Resources, Bakersfield

ATTACHMENT A

The following table contains the names of oil fields and lease(s) and the corresponding number of ponds that the Central Valley Water Board has identified as active and under your control:

OPERATOR	OIL FIELD	LEASE	NO. OF PONDS
J & K Operating Company Inc.	Midway-Sunset	Jade Kern Project	1

ATTACHMENT B**Water Quality Analysis**

Wastewater samples collected from the ponds shall be analyzed by a laboratory certified by the Environmental Laboratory Accreditation Program using currently applicable United States Environmental Protection Agency-approved analytical methods for water for the following:

- A. Total dissolved solids;
- B. Metals listed in California Code of Regulations, title 22, section 66261.24. subdivision (a)(2)(A);
- C. Benzene, toluene, ethylbenzene, and xylenes;
- D. Total petroleum hydrocarbons as crude oil;
- E. Polynuclear aromatic hydrocarbons (including acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, chrysene, dibenzo[a,h]anthracene, fluoranthene, fluorine, indeno[1,2,3-cd]pyrene, naphthalene, phenanthrene, and pyrene);
- F. Radionuclides listed under California Code of Regulations, title 22, Table 64442;
- G. Major and minor cations (including sodium, potassium, magnesium, and calcium);
- H. Major and minor anions (including nitrate, chloride, sulfate, carbonate, bicarbonate, and bromide);
- I. Trace elements (including lithium, strontium, boron, iron, and manganese).

Reporting Requirements

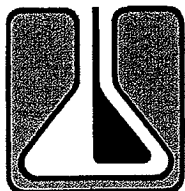
Water Quality information shall be submitted in a technical report that includes at a minimum:

- A. Site plan(s) with the location(s) of where the samples were collected;
- B. A description of how the samples, representative of the pond contents, were collected;

Table(s) of analytical results organized by pond number with the data also submitted electronically as an Excel spreadsheet.

ATTACHMENT C

J&K OPERATING COMPANY, INC
LABORATORY ANALYTICAL REPORT



ZALCO LABORATORIES, INC.

Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

April 29, 2015

Kal Vaughn
J & K Operating Company, Inc
909 Twenty One Canyon Road
Taft, CA 93268

TEL: (661) 342-2838
FAX: -

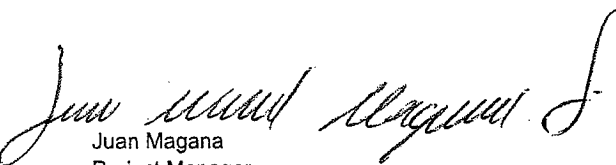
Project ID:
RE: 1504121

Dear Kal Vaughn:

Zalco Laboratories, Inc. received 1 samples on 4/13/2015 for the analyses presented in the following report.

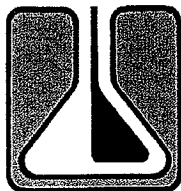
We appreciate your business and look forward to serving you in the future. Please feel free to call our office if you have any questions regarding these test results.

Sincerely,


Juan Magana
Project Manager
CC:

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Note: Samples analyzed for regulatory purposes should be put on ice immediately after sampling and received by the laboratory at temperatures between 0-6°C. Microbiological analysis requires samples to be at least 4-10°C when received at the laboratory. For additional information regarding the limitations of the method(s) referred to, please call us at 661-395-0539.

**ZALCO LABORATORIES, INC.**

Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308(661) 395-0539
FAX (661) 395-3069

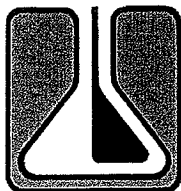
J & K Operating Company, Inc 909 Twenty One Canyon Road Taft, CA 93268	Project: RWQCB Oilfield Ponds - 2Q2015 Project #: Attention: Kal Vaughn	Work Order No.: 1504121 Reported: 04/29/2015 Received: 04/13/2015 11:00
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Lab Sample ID: 1504121-01 Client Sample ID: Jade Kern Project	Collected By: Kal Vaughn Date Collected: 4/11/2015 10:00:00AM
--	--

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Alkalinity								
Total Alkalinity	1200	10	mg/L		SM 2320B	4/13/15	4/13/15	MRF
Bicarbonate (HCO ₃)	1200	10	mg/L		SM 2320B	4/13/15	4/13/15	MRF
Carbonate (CO ₃)	<10	10	mg/L		SM 2320B	4/13/15	4/13/15	MRF
Hydroxide (OH)	<10	10	mg/L		SM 2320B	4/13/15	4/13/15	MRF
CAM, Toxicity (17 Metals)								
<i>TTL Limits</i>								
Antimony	<0.20	0.20	500	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Arsenic	<0.020	0.020	500	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Barium	0.26	0.10	10000	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Beryllium	<0.010	0.010	75	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Cadmium	<0.010	0.010	100	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Chromium	<0.050	0.050	2500	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Cobalt	<0.10	0.10	8000	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Copper	<0.050	0.050	2500	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Lead	<0.050	0.050	1000	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Mercury	<0.0020	0.0020	20	mg/L	SW846 7470A	4/14/15	4/14/15	SS
Molybdenum	<0.10	0.10	3500	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Nickel	0.054	0.050	2000	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Selenium	<0.05	0.05	100	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Silver	<0.020	0.020	500	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Thallium	<0.50	0.50	700	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Vanadium	<0.10	0.10	2400	mg/L	SW846 6010B	4/17/15	4/21/15	SS
Zinc	<0.050	0.050	5000	mg/L	SW846 6010B	4/17/15	4/21/15	SS
General Chemistry								
<i>MCL Limits</i>								
Fluoride	<1.0	1.0	2	mg/L	EPA 300.0	4/16/15	4/16/15	MSS
Nitrate as NO ₃	<500	500	45	mg/L	EPA 300.0	4/16/15	4/16/15	MSS
Electrical Conductivity	16	0.010		mmhos/cm	SM 2510B	4/13/15	4/13/15	SAM
Chloride	4700	500		mg/L	EPA 300.0	4/16/15	4/16/15	MSS
pH	7.45			pH Units	1-02 EPA 150.1	4/13/15	4/13/15	MRF
Sulfate as SO ₄	68	5.0		mg/L	EPA 300.0	4/16/15	4/16/15	MSS
Total Dissolved Solids	9100	10		mg/L	SM 2540C	4/14/15	4/14/15	MSS
Hardness								
Hardness (as CaCO ₃)	240	2.0		mg/L	SM 2340B	4/13/15	4/13/15	SS

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTL: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
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**ZALCO LABORATORIES, INC.**

Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308(661) 395-0539
FAX (661) 395-3069

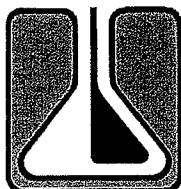
J & K Operating Company, Inc 909 Twenty One Canyon Road Taft, CA 93268	Project: RWQCB Oilfield Ponds - 2Q2015 Project #: Attention: Kal Vaughn	Work Order No.: 1504121 Reported: 04/29/2015 Received: 04/13/2015 11:00
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Lab Sample ID: 1504121-01 Client Sample ID: Jade Kern Project	Collected By: Kal Vaughn Date Collected: 4/11/2015 10:00:00AM
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Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Metals								
Lithium	2.2	0.10	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Metals - As Received								
Magnesium	42	0.050	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Potassium	65	0.50	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Sodium	4300	70	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Calcium	27	0.050	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Iron	<0.10	0.10	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Boron	29	0.10	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Barium	0.22	0.10	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Copper	<0.050	0.050	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Silica (SiO ₂)	63	4.0	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Strontium	1.3	0.10	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Manganese	<0.030	0.030	mg/L		EPA 200.7	4/13/15	4/13/15	SS
Oil & Grease Testing								
TRPH	<5.00	5.00	mg/L		EPA 1664	4/24/15	4/24/15	BIG
Semivolatile Organic Compounds								
Indeno(1,2,3-cd)pyrene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Naphthalene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Acenaphthylene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Acenaphthene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Fluorene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Phenanthrene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Anthracene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Fluoranthene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Pyrene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Benzo (a) anthracene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Chrysene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Benzo (b) fluoranthene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Benzo (k) fluoranthene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Benzo (a) pyrene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Dibenz (a,h) anthracene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Benzo (g,h,i) perylene	<10.0	10.0	ug/L		SW846 8270C	4/17/15	4/20/15	JMM
Surrogates	% Recovery	Recovery Limits	Flag					

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Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308(661) 395-0539
FAX (661) 395-3069J & K Operating Company, Inc
909 Twenty One Canyon Road
Taft, CA 93268Project: RWQCB Oilfield Ponds - 2Q2015
Project #:
Attention: Kal VaughnWork Order No.: 1504121
Reported: 04/29/2015
Received: 04/13/2015 11:00

Lab Sample ID: 1504121-01

Collected By: Kal Vaughn

Client Sample ID: Jade Kern Project

Date Collected: 4/11/2015 10:00:00AM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Semivolatile Organic Compounds								
Nitrobenzene-d5		64.5	0-95				4/20/15 14:56	
2-Fluorobiphenyl		58.8	0-92				4/20/15 14:56	
Terphenyl-d14		44.1	0-100				4/20/15 14:56	
Volatile Organic Compounds								
m,p-Xylene	13.7	5.00	ug/L		SW846 8260B	4/21/15	4/21/15	HLP
Benzene	18.4	5.00	ug/L		SW846 8260B	4/21/15	4/21/15	HLP
Xylenes, total	23.3		ug/L		SW846 8260B	4/21/15	4/21/15	HLP
Methyl tert-Butyl Ether	<5.00	5.00	ug/L		SW846 8260B	4/21/15	4/21/15	HLP
Ethylbenzene	19.6	5.00	ug/L		SW846 8260B	4/21/15	4/21/15	HLP
Toluene	<5.00	5.00	ug/L		SW846 8260B	4/21/15	4/21/15	HLP
o-Xylene	9.56	5.00	ug/L		SW846 8260B	4/21/15	4/21/15	HLP
Surrogates								
		% Recovery	Recovery Limits	Flag				
1,2-Dichloroethane-d4		117	89-165				4/21/15 13:40	
Toluene-d8		109	65-124				4/21/15 13:40	
4-Bromofluorobenzene		94.1	94-114				4/21/15 13:40	

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May 1, 2015

Lab ID : SP 1503971-001

Customer ID : 2-249

Zalco Laboratories, Inc.

4309 Armour Avenue

Bakersfield, CA 93308-4573

Sampled On : April 11, 2015-10:00

Sampled By : Not Available

Received On : April 14, 2015-10:50

Matrix : Water

Description : 1504121-01

Project : 1504121

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry^{P-15}								
Gross Alpha	9.67 ± 4.01	4.59	pCi/L	15/5	900.0	04/17/15-08:30 2P1504476	900.0	04/21/15-12:00 2A1506000
Gross Beta	13.2 ± 3.11	3.19	pCi/L	50	900.0	04/17/15-08:30 2P1504476	900.0	04/21/15-12:00 2A1506000
Total Alpha Radium (226)	0.119 ± 0.202	0.470	pCi/L	3	903.0	04/17/15-17:45 2P1504530	903.0	04/22/15-11:00 2A1506057
Uranium	0.594 ± 0.549	0.300	pCi/L	20	908.0	04/29/15-07:30 2P1504942	908.0	04/29/15-18:02 2A1506422
Ra 228	0.000 ± 0.826	0.400	pCi/L	2	Ra - 05	04/28/15-18:00 2P1504529	Ra - 05	04/30/15-18:50 2A1506473

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: HNO3 pH < 2 * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.

MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).

AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following

If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:

Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L

Uranium is less than or equal to 20 pCi/L

Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

